PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
REG/G20711WO		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/GB2004/001551	08/04/2004	10/04/2003
Applicant		
PIEZOPTIC LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
      [ ] The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
   b. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box II).

3. [ ] **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,
   [ ] the text is approved as submitted by the applicant.
   [X] the text has been established by this Authority to read as follows:

   OPTICAL CHEMICAL SENSING DEVICE WITH PYROELECTRIC OR PIEZOELECTRIC TRANSDUCER

5. With regard to the **abstract**,
   [ ] the text is approved as submitted by the applicant.
   [X] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 1
      [X] as suggested by the applicant.
      [ ] as selected by this Authority, because the applicant failed to suggest a figure.
      [ ] as selected by this Authority, because this figure better characterizes the invention.
   b. [ ] none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2004/001551

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

This invention relates to a device (1) for detecting energy generated by non-radiative decay generated in a substance (2) on irradiation with electromagnetic radiation. The device (1) comprises a radiation source (6) adapted to generate a series of pulses of electromagnetic radiation, a transducer (3) having a pyroelectric or piezoelectric element and electrodes (4, 5) which is capable of transducing the energy generated by the substance (2) into an electrical signal, and a detector (7) which is capable of detecting the electrical signal generated by the transducer (3). The detector (7) is adapted to determine the time delay between each pulse of electromagnetic radiation from the radiation source (6) and the generation of the electric signal. The device (1) has a wide applicability in the fields of assays and monitoring.

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International Application No
PCT/GB2004/001551

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N21/17 G01N25/48 G01N33/487 G01N33/53

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ, WPI Data, BIOSIS, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 90/13017 A (HEALTH LAB SERVICE BOARD) 1 November 1990 (1990-11-01) cited in the application page 4, line 17 - line 19 page 5, line 10 -page 6, line 24; figure 1 ---	1-10, 13-15, 18-29
X	GIBSON C A ET AL: "Kinetic factors in the response of piezo-optical chemical monitoring devices" SENSORS AND ACTUATORS B, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 51, no. 1-3, 31 August 1998 (1998-08-31), pages 238-243, XP004154016 ISSN: 0925-4005 the whole document --- -/--	1,2,9, 11-16, 19,20, 27,28

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
15 July 2004	26/07/2004

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Duijs, E

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International Application No
PCT/GB2004/001551

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WRIGHT J D ET AL: "Development of a piezo-optical chemical monitoring system" SENSORS AND ACTUATORS B, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 51, no. 1-3, 31 August 1998 (1998-08-31), pages 121-130, XP004153998 ISSN: 0925-4005 the whole document	1,2,9, 13-16, 19,20, 27,28
X	FR 2 715 226 A (UNIV REIMS CHAMPAGNE ARDENNE) 21 July 1995 (1995-07-21) page 1, line 1 - line 10; figures 1,2,5,7 page 4, line 5 - line 27 page 5, line 23 -page 6, line 16 page 8, line 8 - line 31 page 10, line 17 - line 31 page 13, line 30 - line 32 page 14, line 4 -page 15, line 1	1,9,13, 16
A	US 6 403 944 B1 (MACKENZIE HUGH ALEXANDER ET AL) 11 June 2002 (2002-06-11) column 10, line 51 -column 11, line 1	1,2,9, 11,12, 19,20,28
A	EP 0 049 918 A (HELANDER PER ;MCQUEEN DOUGLAS (SE); LUNDSTROEM INGEMAR (SE)) 21 April 1982 (1982-04-21) page 3 -page 7; figures 1,2	1,9,16, 19,20,28
A	VISSER E P ET AL: "MEASUREMENT OF THERMAL DIFFUSION IN THIN FILMS USING A MODULATED LASER TECHNIQUE: APPLICATION TO CHEMICAL-VAPOR-DEPOSITED DIAMOND FILMS" JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 71, no. 7, 1 April 1992 (1992-04-01), pages 3238-3248, XP000295978 ISSN: 0021-8979 paragraph '00II!; figures 1,3,5	

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Information on patent family members

International Application No
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